AMENDMENTS

IN THE CLAIMS:

Please amend claim 1, 3, 12, 14, 20 and 22 as follows below:

1. (Currently Amended)   A method of transferring data between a host and a network, the method comprising:

providing a plurality of data transfer queues in a shared memory, the individual data transfer queues comprising a priority level and one or more entries, the individual entries being associated with data to be transferred between the host and the network, wherein a first data transfer queue has a higher priority level than a second data transfer queue; and

transferring data between the host and the network by transferring data associated with entries of the first data transfer queue before transferring data associated with entries of the second data transfer queue, wherein one or more receive descriptors in one of a plurality of receive descriptor rings comprising the data transfer queues point to the data stored in a memory buffer.

2. (Original)   The method of claim 1, wherein each of the data transfer queues has a unique priority level, and wherein transferring data between the host and the network comprises transferring data associated with entries of a particular data transfer queue only after all data associated with entries of higher priority data transfer queues has been transferred.

3. (Currently Amended)   The method of claim 2:

wherein providing the plurality of data transfer queues comprises providing a~~the~~ plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings comprising a unique priority level and the one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host; and

wherein transferring data between the host and the network comprises transferring one or more data frames associated with one or more receive descriptors of a particular receive descriptor ring only after all data associated with receive descriptors of higher priority receive descriptor rings has been transferred.

4. (Original) The method of claim 1, wherein each of the data transfer queues has a unique priority level, and wherein transferring data between the host and the network comprises:

determining a number of data frames associated with entries of data transfer queues of a higher priority than a particular data transfer queue that have been transferred while the particular data transfer queue was requesting service; and

transferring data associated with entries of a particular data transfer queue if all data associated with entries of higher priority data transfer queues has been transferred or if the number is greater than or equal to a threshold value associated with the particular data transfer queue.

5. (Original) The method of claim 4, wherein determining the number of data frames associated with entries of data transfer queues of a higher priority comprises:

providing individual counters for all but a highest priority data transfer queue;

providing a threshold value for a particular data transfer queue;

clearing a counter for the particular data transfer queue when data associated with an entry of the particular queue is transferred between the host and the network; and

incrementing the counter for the particular data transfer queue when the particular data transfer queue is requesting service and a data frame associated with an entry of a higher priority data transfer queue is transferred between the host and the network.

6. (Original)   The method of claim 5, wherein threshold values for different data transfer queues are different.

7. (Original)   The method of claim 5:

wherein providing the plurality of data transfer queues comprises providing a plurality of transmit descriptor rings in the shared memory, the individual transmit descriptor rings comprising a unique priority level and one or more transmit descriptors, the transmit descriptors being associated with one or more data frames received from the host that are to be transferred to the network; and

wherein transferring data between the host and the network comprises transferring data associated with transmit descriptors of a particular transmit descriptor ring if all data associated with transmit descriptors of higher priority transmit descriptor rings has been transferred or if the number of data frames associated with entries of data transfer queues of a higher priority is greater than or equal to a threshold value associated with the particular transmit descriptor ring.

8. (Original)   The method of claim 4:

wherein providing the plurality of data transfer queues comprises providing a plurality of transmit descriptor rings in the shared memory, the individual transmit descriptor rings comprising a unique transmit priority level and one or more transmit descriptors, the transmit descriptors being associated with one or more data frames received from the host that are to be transferred to the network; and

wherein transferring data between the host and the network comprises transferring data associated with transmit descriptors of a particular transmit descriptor ring if all data associated with transmit descriptors of higher transmit priority transmit descriptor rings has been transferred or if the number of data frames associated with entries of data transfer queues of a higher priority is greater than or equal to a threshold value associated with the particular transmit descriptor ring.

9. (Original) The method of claim 8:

wherein providing the plurality of data transfer queues further comprises providing a plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings comprising a unique receive priority level and one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host; and

wherein transferring data between the host and the network comprises transferring one or more data frames associated with one or more receive descriptors of a particular receive descriptor ring only after all data associated with receive descriptors of higher receive priority receive descriptor rings has been transferred.

10. (Original) The method of claim 1, wherein providing the plurality of data transfer queues comprises:

providing a plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings comprising a unique receive priority level and one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host, and

providing a plurality of transmit descriptor rings in the shared memory, the individual transmit descriptor rings comprising a unique transmit priority level and one or more transmit descriptors, the transmit descriptors being associated with one or more data frames received from the host that are to be transferred to the network; and

wherein transferring data between the host and the network comprises:

transferring one or more data frames associated with one or more receive descriptors of a particular receive descriptor ring only after all data associated with receive descriptors of higher receive priority receive descriptor rings has been transferred, and

transferring data associated with transmit descriptors of a particular transmit descriptor ring if all data associated with transmit descriptors of higher transmit priority transmit descriptor rings has been transferred or if the number of data frames

associated with entries of data transfer queues of a higher priority is greater than or equal to a threshold value associated with the particular transmit descriptor ring.

11. (Original) The method of claim 1, further comprising providing an entry to a particular data transfer queue according to the data associated with the entry.

12. (Currently Amended) A system for transferring data between a host and a network using a shared memory, the system comprising:

a plurality of data transfer queues in a shared memory, the individual data transfer queues comprising one or more entries, and the individual entries being associated with data to be transferred between the host and the network; and

a network interface system coupled with the shared memory, the host, and the network, the network interface comprising a descriptor management system storing a plurality of priority levels, the priority levels being individually associated with one of the data transfer queues, wherein a first data transfer queue has a higher priority level than a second data transfer queue, and wherein the network interface system transfers data between the host and the network by transferring data associated with entries of the first data transfer queue before transferring data associated with entries of the second data transfer queue, and wherein one or more receive descriptors in one of a plurality of receive descriptor rings comprising the data transfer queues point to the data stored in a memory buffer.

13. (Original) The system of claim 12, wherein each of the data transfer queues has a unique priority level.

14. (Currently Amended)   The system of claim 13, wherein the plurality of data transfer queues comprises a~~the~~ plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings comprising a unique receive priority level and the one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host, and wherein the descriptor management system provides a receive descriptor to a particular receive descriptor ring according to the data associated with the receive descriptor.

15. (Original) The system of claim 13, wherein the plurality of data transfer queues comprises a plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings comprising a unique receive priority level and one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host, and wherein the host reads one or more data frames from the shared memory that are associated with one or more receive descriptors of a particular receive descriptor ring only after all data associated with receive descriptors of higher priority receive descriptor rings has been read from the shared memory.

16. (Original) The system of claim 12:

wherein the plurality of data transfer queues comprises a plurality of transmit descriptor rings in the shared memory, the individual transmit descriptor rings comprising a unique transmit priority level and one or more transmit descriptors, the transmit descriptors being associated with one or more data frames received from the host that are to be transferred to the network;

wherein the descriptor management system comprises a plurality of counters individually corresponding to all but a highest priority transmit descriptor ring;

wherein the network interface system transfers data associated with transmit descriptors of a particular transmit descriptor ring from the shared memory to the

network if all data associated with transmit descriptors of higher priority transmit descriptor rings has been transferred or if a value of a counter corresponding to the particular transmit descriptor ring is greater than or equal to a threshold value associated with the particular transmit descriptor ring;

wherein the descriptor management unit clears the counter for the particular transmit descriptor ring when data associated with a transmit descriptor of the particular transmit descriptor ring is transferred from the shared memory to the network; and

wherein the descriptor management unit increments the counter for the particular transmit descriptor ring when a data frame associated with a transmit descriptor of a higher priority transmit descriptor ring is transferred from the shared memory to the network.

17. (Original) The system of claim 16, wherein the host provides a plurality of threshold values to the descriptor management system, the threshold values individually corresponding to all but the highest priority transmit descriptor ring.

18. (Original) The system of claim 16, wherein the host provides data to the shared memory and provides a corresponding transmit descriptor to a particular transmit descriptor ring according to a desired transmit priority for the data.

19. (Original) The system of claim 16, wherein the plurality of data transfer queues further comprises a plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings comprising a unique receive priority level and one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host, and wherein the host reads one or more data frames from the shared memory that are associated with one or more receive descriptors of a particular receive descriptor ring only after all data associated with receive descriptors of higher priority receive descriptor rings has been read from the shared memory.

20. (Currently Amended)   A network interface system for interfacing a host with a network, the system comprising:

a descriptor management system storing a plurality of priority levels, the priority levels being individually associated with a data transfer queue in a shared memory, wherein a first data transfer queue has a higher priority level than a second data transfer queue, ~~and~~ wherein the network interface system transfers data between the host and the network by transferring data associated with entries of the first data transfer queue before transferring data associated with entries of the second data transfer queue, and wherein one or more receive descriptors in one of a plurality of receive descriptor rings comprising the data transfer queues point to the data stored in a memory buffer.

21. (Original) The system of claim 20, wherein each of the data transfer queues has a unique priority level.

22. (Currently Amended)   The system of claim 21, wherein the plurality of data transfer queues comprises a~~the~~ plurality of receive descriptor rings in the shared memory, the individual receive descriptor rings corresponding to a unique receive priority level and comprising the one or more receive descriptors, the receive descriptors being associated with one or more data frames received from the network that are to be transferred to the host, and wherein the descriptor management system provides a receive descriptor to a particular receive descriptor ring according to the data associated with the receive descriptor.

23. (Original) The system of claim 20:

wherein the plurality of data transfer queues comprises a plurality of transmit descriptor rings in the shared memory, the individual transmit descriptor rings comprising a unique transmit priority level and one or more transmit descriptors, the transmit descriptors being associated with one or more data frames received from the host that are to be transferred to the network;

wherein the descriptor management system comprises a plurality of counters individually corresponding to all but a highest priority transmit descriptor ring;

wherein the network interface system transfers data associated with transmit descriptors of a particular transmit descriptor ring from the shared memory to the network if all data associated with transmit descriptors of higher priority transmit descriptor rings has been transferred or if a value of a counter corresponding to the particular transmit descriptor ring is greater than or equal to a threshold value associated with the particular transmit descriptor ring;

wherein the descriptor management unit clears the counter for the particular transmit descriptor ring when data associated with a transmit descriptor of the particular transmit descriptor ring is transferred from the shared memory to the network; and

wherein the descriptor management unit increments the counter for the particular transmit descriptor ring when a data frame associated with a transmit descriptor of a higher priority transmit descriptor ring is transferred from the shared memory to the network.